

REMARKS

Claims 1-18 are pending in the application. Claims 1, 7, and 12 are independent. By the foregoing Amendment, Applicants seek to amend claims 1, 7, and 12, and cancel claims 19- 25. These changes are believed to introduce no new matter and their entry is respectfully requested.

Rejection of Claim 1 Under 35 U.S.C. §§102(a) and 102(e)

In the Office Action, the Examiner rejected claim 1 under 35 U.S.C. §§102(a) and 102(e) as being anticipated by U.S. Patent Publication No. 2003/0042561 to Funaki. (hereinafter “*Funaki*”). Applicant respectfully traverses the rejection.

A claim is anticipated only if each and every element of the claim is found, either expressly or inherently, in a reference. (MPEP §2131 *citing Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). The identical invention must be shown in as complete detail as is contained in the claim. *Id. citing Richardson v. Suzuki Motor Co.*, 868 F.2d 1226,1236 (Fed. Cir. 1989)).

Amended claim 1 recites in pertinent part “forming a layer of material on a silicon wafer, the silicon wafer having variations in surface topology comprising at least one thick region and at least one thin region, *the layer of material having variations in surface topology caused by the variations in the surface topology of the silicon wafer*, the variations in the surface topology of the layer of material comprising at least one thick region and at least one thin region corresponding to the thick regions and the thin regions of the wafer, respectively; and forming at least one narrow region and at least one wide region in the layer of material, *proportions of the narrow regions and proportions of the wide regions corresponding to the thick regions and the thin regions of the wafer caused by the variations in the surface topology of the silicon wafer*, respectively” (emphasis added). Support for these changes according to at least one embodiment can be found in Applicants’ Specification at paragraph [0021].

In the Office Action, the Examiner states that *Funaki* discloses forming a layer of material 21 on a silicon wafer 10, the silicon wafer has variations in its surface topology comprising at least one thick region and at least one thin region at location 32, the layer of

material 21 has variations in its surface topology comprising at least one thick region and at least one thin region corresponding to the thick and thin regions of the wafer, forming narrow and wide regions in the layer of material 21 that correspond to the thick and thin regions of the wafer. Applicants respectfully disagree with the Examiner's characterization of *Funaki*.

Funaki appears to disclose a method of manufacturing a switch. In *Funaki*, a sacrificial layer 31 of insulating material is deposited on a wafer 10. The sacrificial layer 31 is etched to produce openings 32 as well as some remaining sacrificial layer 31. A layer 21 of polysilicon is deposited on the openings 32 and the remaining sacrificial layer 31. The layer 21 of polysilicon is etched to form the crossbar of the switch.

Applicants respectfully submit that *Funaki* fails to disclose that variations in the surface topology of the layer of material 21, that is the openings 32, are caused by variations in the surface topology in the wafer 10. To the contrary, in *Funaki* the openings 32 have no relationship to variations in the surface topology of the wafer 10. In fact, *Funaki* does not contemplate variations or unevenness in the surface topology of the wafer 10.

Applicants respectfully submit further that *Funaki* fails to disclose that the proportions of the layer 21 of polysilicon that remains in the openings 32 after etching is not caused by the variations in the surface topology of the silicon wafer. It appears that the proportions of the layer 21 of polysilicon that remains in the openings 32 after etching is determined by the dimension of the crossbar of the switch. Because *Funaki* is not properly applied to and/or fails to teach the identical invention as shown in claim 1, Applicants respectfully submit that claim 1 is patentable over the *Funaki*. Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claim 1.

Rejection of Claims 2-4 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 1-4 under 35 U.S.C. §103(a) as being obvious over *Funaki* as applied to claim 1 in view of U.S. Patent No. 6,387,808 to Schlitz et al. (hereinafter "Schlitz"). Applicants respectfully traverse the rejection.

To establish a *prima facie* case of obviousness, an Examiner must show that that there is some suggestion or motivation to modify a reference to arrive at the claimed invention, that there is some expectation of success, and that the cited reference teaches each and every element of the claimed invention. (MPEP §2143.) *citing In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

Claims 2-4 properly depend from claim 1, which Applicants respectfully submit is patentable. Accordingly, Applicants respectfully submit that claims 2-4 are patentable for at least the same reasons that claim 1 is patentable. (MPEP §2143.03 (*citing In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). Accordingly, Applicants respectfully request that the Examiner reconsider and remove the rejection to claims 1-4.

Rejection of Claims 5-6 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 5-6 under 35 U.S.C. §103(a) as obvious over *Funaki* in view of *Schlitz* in further view of U.S. Patent No. 5,502,564 to *Ledger* (hereinafter “*Ledger*”). Applicants respectfully traverse the rejection.

Claims 5-6 properly depend from claim 1, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 5-6 are patentable as well. (See MPEP §2143.03 (*citing In re Fine*.)) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 5-6.

Rejection of Claims 7-10 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 7-10 under 35 U.S.C. §103(a) as obvious over *Funaki* in view of *Schlitz* as applied to claims 2-4 in further view of U.S. Patent No. 6,437,903 to *Kozhukh* et al. (hereinafter “*Kozhukh*”). Applicants respectfully traverse the rejection.

Amended claim 7 recites in pertinent part “forming a layer of material on a silicon wafer, the silicon wafer having variations in surface topology comprising at least one thick region and at least one thin region, *the layer of material having variations in surface topology caused by*

the variations in the surface topology of the silicon wafer, the variations in the surface topology of the layer of material comprising at least one thick region and at least one thin region corresponding to the thick regions and the thin regions of the wafer, respectively; and forming at least one narrow region and at least one wide region in the layer of material, *proportions of the narrow regions and proportions of the wide regions corresponding to the thick regions and the thin regions of the wafer caused by the variations in the surface topology of the silicon wafer*, respectively" (emphasis added). Support for these changes according to at least one embodiment can be found in Applicants' Specification at paragraph [0021].

Applicants respectfully reiterate that *Funaki* fails to disclose that variations in the surface topology of the layer of material 21, that is the openings 32, are caused by variations in the surface topology in the wafer 10. To the contrary, in *Funaki* the openings 32 have no relationship to variations in the surface topology of the wafer 10. In fact, *Funaki* does not contemplate variations in the surface topology of the wafer 10.

Applicants respectfully submit further that *Funaki* fails to disclose that the proportions of the layer 21 of polysilicon that remains in the openings 32 after etching is not caused by the variations in the surface topology of the silicon wafer. It appears that the proportions of the layer 21 of polysilicon that remains in the openings 32 after etching is determined by the dimension of the crossbar of the switch. Because *Funaki* is not properly applied to and/or fails to teach the identical invention as shown in claim 7, Applicants respectfully submit that claim 7 is patentable over the *Funaki*.

Claims 8-10 properly depend from claim 7, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 8-10 are patentable as well. (See MPEP §2143.03 (citing *In re Fine*.)) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 7-10.

Rejection of Claim 11 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claim 11 under 35 U.S.C. §103(a) as obvious over *Funaki* in view of *Schlitz* in view of *Kozhukh* as applied to claims 7-10 and in further view

of *Ledger*. Applicant respectfully traverses the rejection. Claim 11 properly depends from claim 7, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claim 11 is patentable as well. (See MPEP §2143.03 (citing *In re Fine*.) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claim 11.

Rejection of Claims 12-13 and 16-17 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 12-13 and 16-17 under 35 U.S.C. §103(a) as obvious over *Funaki* in view of *Schlitz* as applied to claims 104 and in further view of U.S. Patent No. 5,015,602 to Van Der Plas et al. (hereinafter “*Van Der Plas*”) and U.S. Patent No. 5,155,053 to Atkinson (hereinafter “*Atkinson*”). Applicants respectfully traverse the rejection.

Amended claim 12 recites in pertinent part “forming a first layer of material on a silicon wafer, the silicon wafer having variations in surface topology comprising thick and thin regions, *the layer of material having variations in surface topology caused by the variations in the surface topology of the silicon wafer*, the variations in the surface topology of the layer of material comprising thick and thin regions corresponding to the thick and thin regions of the wafer, respectively; forming a sacrificial layer of material on the first layer, the sacrificial layer of material having variations in surface topology comprising thick and thin regions corresponding to the thick and thin regions of the first layer, respectively; and forming narrow and wide regions in the sacrificial layer of material, *proportions of the narrow and proportions of the wide regions* corresponding to the thick and thin regions of the wafer *caused by the variations in the surface topology of the silicon wafer*, respectively” (emphasis added). Support for these changes according to at least one embodiment can be found in Applicants’ Specification at paragraph [0021].

Applicants respectfully reiterate that *Funaki* fails to disclose that variations in the surface topology of the layer of material 21, that is the openings 32, are caused by variations in the surface topology in the wafer 10. To the contrary, in *Funaki* the openings 32 have no relationship to variations in the surface topology of the wafer 10. In fact, *Funaki* does not contemplate

variations in the surface topology of the wafer 10.

Applicants respectfully submit further that *Funaki* fails to disclose that the proportions of the layer 21 of polysilicon that remains in the openings 32 after etching is not caused by the variations in the surface topology of the silicon wafer. It appears that the proportions of the layer 21 of polysilicon that remains in the openings 32 after etching is determined by the dimension of the crossbar of the switch. Because *Funaki* is not properly applied to and/or fails to teach the identical invention as shown in claim 7, Applicants respectfully submit that claim 7 is patentable over the *Funaki*.

Claims 13 and 16-17 properly depends from claim 12, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 13 and 16-17 are patentable as well. (See MPEP §2143.03 (citing *In re Fine*.)). Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claim 12-13 and 16-17.

Rejection of Claims 14-15 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 14-15 under 35 U.S.C. §103(a) as obvious over *Funaki* and *Schlitz* as applied to claims 1-4, taken with *Van Der Plas* in view of *Atkinson* as applied to claims 12 and 16-17, and in further view of U.S. Patent No. 5,112,602 to Banks et al. (hereinafter “*Banks*”). Applicant respectfully traverses the rejection. Claims 14-15 properly depend from claim 12, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 14-15 are patentable as well. (See MPEP §2143.03 (citing *In re Fine*.)). Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 14-15.

Rejection of Claim 18 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claim 18 under 35 U.S.C. §103(a) as obvious over *Funaki* and *Schlitz* as applied to claims 1-4, taken with *Van Der Plas* in view of *Atkinson* as applied to claims 12 and 16-17, and in further view of *Ledger*. Applicant respectfully traverses the rejection. Claim 18 properly depends from claim 12, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claim 18 is patentable as well. (See

MPEP §2143.03 (citing *In re Fine*.) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claim 18.

Rejection of Claims 19-20 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 19-20 under 35 U.S.C. §103(a) as obvious over *Funaki* and *Schlitz* as applied to claims 1-4, taken with *Van Der Plas* in view of *Atkinson* as applied to claims 12 and 16-17, and in further view of *Kozhukh*. Applicant respectfully traverses the rejection. By the foregoing Amendment, Applicants seek to cancel claims 19-20 to render the rejection to them moot. Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 19-20.

Rejection of Claims 21-22 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 21-22 under 35 U.S.C. §103(a) as obvious over *Funaki* and *Schlitz* as applied to claims 2-4, taken with *Van Der Plas* in view of *Atkinson* and *Banks* as applied to claims 14-15, and in further view of *Kozhukh*. Applicant respectfully traverses the rejection. By the foregoing Amendment, Applicants seek to cancel claims 21-22 to render the rejection to them moot. Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 21-22.

Rejection of Claims 1-4 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 1-4 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 5,976,769 to Chapman (hereinafter “*Chapman*”) in view of U.S. Patent Application No. 2002/0187434 A1 to Blatchford, Jr. et al (hereinafter “*Blatchford*”) in further view of U.S. Patent No. 6,570,468 to Ma et al. (hereinafter “*Ma*”).

Applicants respectfully submit that *Chapman* in view of *Blatchford* in further view of *Ma* fail to teach each and every element of the claimed invention. For example, *Chapman* appears to be directed to fabrication of semiconductor devices. *Chapman*, therefore, is concerned with uniformity of the surface layer of the final device. *Chapman* does not teach or fairly suggest a layer of material disposed on a substrate having variations in surface topology caused by the variations in the surface topology of the substrate. *Blatchford* does not teach or fairly suggest a

layer of material disposed on a substrate having variations in surface topology caused by the variations in the surface topology of the substrate. Thus *Blatchford* does not make up for the deficiencies in *Chapman*. *Ma* does not teach or fairly suggest a layer of material disposed on a substrate having variations in surface topology caused by the variations in the surface topology of the substrate. Thus *Ma* does not make up for the deficiencies in *Blatchford* and *Chapman*. Because *Chapman* in view of *Blatchford* in further view of *Ma* fails to teach each and every element recited in claim 1, Applicants respectfully submit that claim 1 is patentable over the *Chapman* in view of *Blatchford* in further view of *Ma*.

Claims 2-4 properly depend from claim 1, which Applicants respectfully submit is patentable. Accordingly, Applicants respectfully submit that claims 2-4 are patentable for at least the same reasons that claim 1 is patentable. (MPEP §2143.03 (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). Accordingly, Applicants respectfully request that the Examiner reconsider and remove the rejection to claims 1-4.

Rejection of Claims 5-6 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 5-6 under 35 U.S.C. §103(a) as obvious over *Chapman* in view of *Blatchford* in further view of *Ma* as applied to claims 1-4 and in further view of *Ledger*. Applicants respectfully traverse the rejection.

Claims 5-6 properly depend from claim 1, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 5-6 are patentable as well. (See MPEP §2143.03 (citing *In re Fine*.) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 5-6.

Rejection of Claims 7-10 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 7-10 under 35 U.S.C. §103(a) as obvious over *Chapman* in view of *Blatchford* in view of *Ma* as applied to claims 1-4 in further view of *Kozhukh*. Applicants respectfully traverse the rejection.

Applicants respectfully reiterate that *Chapman* in view of *Blatchford* in further view of

Ma fails to disclose a layer of material having variations in surface topology caused by the variations in the surface topology of a silicon wafer. *Kozhukh* does not make up for the deficiencies in *Chapman* in view of *Blatchford* in further view of *Ma* because *Kozhukh* also fails to disclose a layer of material having variations in surface topology caused by the variations in the surface topology of a silicon wafer. Because *Chapman* in view of *Blatchford* in view of *Ma* as applied to claims 1-4 in further view of *Kozhukh* fails to teach each and every element recited in claim 7, Applicants respectfully submit that claim 7 is patentable over the *Chapman* in view of *Blatchford* in further view of *Ma*.

Claims 8-10 properly depend from claim 7, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 8-10 are patentable as well. (See MPEP §2143.03 (citing *In re Fine*.) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 7-10.

Rejection of Claim 11 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claim 11 under 35 U.S.C. §103(a) as obvious over *Chapman* in view of *Blatchford* in view of *Ma* in further view of *Kozhukh* in view of *Kozhukh* as applied to claims 7-10 and in further view of *Ledger*. Applicant respectfully traverses the rejection. Claim 11 properly depends from claim 7, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claim 11 is patentable as well. (See MPEP §2143.03 (citing *In re Fine*.) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claim 11.

Rejection of Claims 12-13 and 16-17 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 12-13 and 16-17 under 35 U.S.C. §103(a) as obvious over *Chapman* in view of *Blatchford* in further view of *Ma* in further view of *Van Der Plas* in further view of *Atkinson*. Applicants respectfully traverse the rejection.

Applicants respectfully reiterate that *Chapman* in view of *Blatchford* in further view of *Ma* fails to disclose a layer of material having variations in surface topology caused by the variations in the surface topology of a silicon wafer. *Van Der Plas* in further view of *Atkinson*

does not make up for the deficiencies in *Chapman* in view of *Blatchford* in further view of *Ma* because both *Van Der Plas* and *Atkinson* fail to disclose a layer of material having variations in surface topology caused by the variations in the surface topology of a silicon wafer. Because *Chapman* in view of *Blatchford* in further view of *Ma* in further view of *Van Der Plas* in further view of *Atkinson* fails to teach each and every element recited in claim 12, Applicants respectfully submit that claim 12 is patentable over the *Chapman* in view of *Blatchford* in further view of *Ma* in further view of *Van Der Plas* in further view of *Atkinson*.

Claims 13 and 16-17 properly depends from claim 12, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 13 and 16-17 are patentable as well. (See MPEP §2143.03 (citing *In re Fine*.)) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claim 12-13 and 16-17.

Rejection of Claims 14-15 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 14-15 under 35 U.S.C. §103(a) as obvious over *Chapman* in view of *Blatchford* in further view of *Ma* taken with *Van Der Plas* in view of *Atkinson* as applied to claims 12 and 16-17, and in further view of *Banks*. Applicant respectfully traverses the rejection. Claims 14-15 properly depend from claim 12, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 14-15 are patentable as well. (See MPEP §2143.03 (citing *In re Fine*.)) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 14-15.

Rejection of Claim 18 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claim 18 under 35 U.S.C. §103(a) as obvious over *Chapman* in view of *Blatchford* in further view of *Ma* as applied to claims 1-4, taken with *Van Der Plas* in view of *Atkinson* as applied to claims 12 and 16-17, and in further view of *Ledger*. Applicant respectfully traverses the rejection. Claim 18 properly depends from claim 12, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claim 18 is patentable as well. (See MPEP §2143.03 (citing *In re Fine*.)) Accordingly,

Applicant respectfully requests that the Examiner reconsider and remove the rejection to claim 18.

Rejection of Claims 19-20 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 19-20 under 35 U.S.C. §103(a) as obvious over *Chapman* in view of *Blatchford* in further view of *Ma* as applied to claims 1-4, taken with *Van Der Plas* in view of *Atkinson* as applied to claims 12-13 and 16-17, and in further view of *Kozhukh*. Applicant respectfully traverses the rejection. By the foregoing Amendment, Applicants seek to cancel claims 19-20 to render the rejection to them moot. Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 19-20.

Rejection of Claims 21-22 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 21-22 under 35 U.S.C. §103(a) as obvious over *Chapman* in view of *Blatchford* in further view of *Ma* as applied to claims 1-4, taken with *Van Der Plas* in view of *Atkinson* as applied to claims 14-15, and in further view of *Kozhukh*. Applicant respectfully traverses the rejection. By the foregoing Amendment, Applicants seek to cancel claims 21-22 to render the rejection to them moot. Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 21-22.

CONCLUSION

Applicants submit that all grounds for rejection have been properly traversed, accommodated, or rendered moot, and that the application is in condition for allowance. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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